Dr. Hapsari, K. Anggi

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https://scholar.google.com/citations?user=KiEoEvgAAAAJ&hl=en

Education and key qualifications

13/03/2018 **PhD,** Biodiversity and Ecology, University of Göttingen, GER, Prof. Dr. Hermann Behling

2013 **Master of Science,** Faculty of Biology, Jenderal Soedirman University, Indonesia

Current position(s)

2024 - present **postdoctoral researcher**, Faculty of Biology, University of Göttingen, Germany

Previous positions

2022 - 2024 **postdoctoral researcher,** Geography Department, University of Exeter, UK

I carried out ecological and biogeochemical research on Colombian mangrove, involved in empirical model development for mangroves, managed small research group and co-supervise students.

2018 - 2022 **postdoctoral researcher**, Faculty of Biology, University of Göttingen, Germany

I carried out (palaoe)ecological and biogeochemical research on SE Asian peatlands, managed research budget, research bureaucracy and collaboration liaison, and co-supervise students.

RESEARCH ACHIEVEMENTS AND PEER RECOGNITION

Research Achievements summary

I focus on *tropical coastal peatlands and mangroves*, exploring their ecosystem dynamics, drivers of change, their response to perturbations and ecosystems interconnectivity. I also focus on *blue and teal carbon*, estimating ecosystems capacity for their storage and sequestration, understanding their recoverability, manageability, and vulnerability, and assessing their carbon provenance thus potential for double accounting. My research activities have afforded me to fulfill my other interests and passions such as gender equality in wetland research, science communication and wetland management and policy. Breakthrough work includes:

1. Yielded an eye-opening finding about hidden consequence of sea level rise on freshwater coastal ecosystems (*Global Change Biology, 2022*), and was featured in multiple media and news outlets.
2. Overturning the assumption that fires are always bad for forested wetlands by shinning lights on the role of fire in ameliorating nutrient-poor peatlands in Indonesia (*Rev. Palaeobotany and Palaeoecology, 2021*).
3. Connected the seemingly unconnected distant ecosystems of mangroves and upland kilometers away (*Global Change Biology, 2020*), which received multiple media coverages.
4. Triggered a turning point in the race of peatland restoration in Indonesia by demonstrating required time for peatland recovery after disturbance, which is not, by any means, short (*Journal of Ecology, 2018*). This challenged the existing policy for peatland restoration in Indonesia and raises intriguing questions on the feasibility of aims and goals of many restoration projects considering resources and regulatory constraints.
5. Highlighted the benefit and importance of legal protection for wetland ecosystems health in highly populated area (*Forest Ecology and Management, 2024*) and showed that protection could help omit the decades required for wetland recovery.

I have investigated and quantify long-term carbon sink capacity of peatlands in Indonesia and documented multiple factors that can enhance or limit those capacities (*Quat. Sci. Rev., 2017; Quat. Sci. Rev. 2024*), driving me to further explore if the capacity and divers of change of peatland carbon sink in other tropical regions are comparable to those in Indonesia (*Palaeogeogr. Palaeoclim. Palaeoecol, 2022; Rev. Palaeobot. Palynol., 2023*). I have also contributed on the development of several methodologies: pollen morphological threshold separation (*Rev. Palaeobot. Palynol., 2022*), testate-amoeba transfer function (*Front. Ecol. Evol., 2020*) and trait-based hydrological reconstruction (*Diversity, 2022*), all of which pioneered the work on respective topic in Indonesia, and led to invitations to co-author review papers (*Anthropocene 2022a, 2022b*) and expert analysis (*Fire Ecol., 2024*). I have strong interests on science communications, which I pursued by determining ways to effectively

translate complex scientific outcome and deliver the "core message" to broad audience, shown by two years in a row Merian Sibylla Merian Award by the Society of Tropical Ecology (2016; 2017) and invitations to contribute in scientific article for general and non-specialist reader (*Geogr. Rundsch., 2023*; *PAGES, 2022*). I am also passionate to break the barrier in male-dominated field of wetland research by co-authoring publications that can inspire women that already have or are pursuing career in STEM (*Area 2022, Mar. Freshwater Res., 2019*) and mentoring female students from underrepresented groups.

Publication list (selection)

1. **Hapsari***, Borrero, van Maanen, Restrepo, Polanía, Sibaja, Gómez, Rodríguez, Urrego. 2024. Structure and carbon stocks of accessible mangroves under different conservation status in the Colombian Caribbean. Forest Ecology and Management 564, 121984
2. **Hapsari*** and Behling*. 2023. Causes of the emergence of tropical forest fires in Indonesia. Geographische Rundschau 11, 18-22 (in German)
3. **Hapsari*,** Jennerjahn, Nugroho, Yulianto, Behling. 2022. Sea level rise and climate change acting as interactive stressors on development and dynamics of tropical peatlands in coastal Sumatra and South Borneo since the LGM. Global Change Biology 28(10), 3459-3479
4. **Hapsari*** and Ballauff. 2022. Distinguishing pollen grains of cereal from wild grasses in the Sundaland region using size separation
5. **Hapsari***, Jennerjahn, Lukas, Karius, Behling. 2020. Intertwined effects of climate and land use change on environmental dynamics and carbon accumulation in a mangrove-fringed coastal lagoon in Java, Indonesia. Global Change Biology 26(3), 1414-1431
6. Cole*, Åkesson, **Hapsari**, Hawthorne, Roucoux, Girkin, Cooper, Ledger, O'Reilly, Thornton. 2022. Tropical peatlands in the Anthropocene: Lessons from the past. Anthropocene 37, 100324
7. Girkin*, Cooper, Ledger, O'Reilly, Thornton, Åkesson, Cole, **Hapsari**, Hawthorne, Roucoux. 2022. Tropical peatland in the Anthropocene: the present and the future. Anthropocene 40, 100354
8. **Hapsari***, Biagioni, Jennerjahn, Saad, Sabiham, Corre, Veldkamp, Behling. 2021. Late Holocene ENSO-related fire impact on vegetation, nutrient status and carbon accumulation on peatlands in Jambi, Sumatra, Indonesia. Rev. Palaeobotany and Palynology 293, 104482
9. **Hapsari***, Biagioni, Jennerjahn, Reimer, Saad, Sabiham, Behling. 2018. Resilience of a peatland in Central Sumatra, Indonesia to past anthropogenic disturbance: Improving conservation and restoration designs using palaeoecology. Journal of Ecology 106(6), 2473-2490
10. **Hapsari***, Biagioni, Jennerjahn, Reimer, Saad, Achnopha, Sabiham, Behling. 2017. Environmental dynamics and carbon accumulation rate of a tropical peatland in Central Sumatra, Indonesia. Quaternary Science Reviews 169, 173-187

Prizes/awards

2018 **Harper Prize (shortlist, best paper by early career researcher),** British Ecological Society
2018 **Charles Boyden Award,** Estuarine and Coastal Science Association
2017 **Maria Sibylla Merian Award (best oral presentation),** Society for Tropical Ecology
2016 **Maria Sibylla Merian Award (best oral presentation),** Society for Tropical Ecology

Invited lectures at conferences, workshops (selection)

2024 **Speaker.** "Potential hidden impact of sea level rise on Indonesian coastal peatland". ECSA60 conference. Hangzhou, China
2024 **Speaker.** "Potential hidden impact of sea level rise on Indonesian coastal peatland". CIFOR-ICRAF seminar. Bogor, Indonesia
2023 **Speaker.** "**The dynamics of blue carbon sequestration in the Magdalena River delta, Colombia**". XXI INQUA congress, Rome, IT
2023 **Speaker.** "**The future of the past: Potential practical applications of paleoecological findings in ecosystem management**". XXI INQUA congress, Rome, IT
2021 **Keynote speaker.** "Indonesian peatland resilience to multiple perturbations". Disaster risk reduction in peatland ecosystem in Indonesia, Jakarta, IDN
2017 **Speaker.** "Resilience of a peatland in Central Sumatra, Indonesia to past anthropogenic disturbance: … 27th Tüxen annual meeting, Göttingen, GER

2017 **Speaker.** "Resilience of a tropical peatland to anthropogenic disturbance". TropPEAT workshop, Honolulu, Hawai'i, USA
2017 **Speaker.** "Anthropogenic disturbance and resilience of a tropical peatland: message from the past". GTOE conference, Brussels, BE
2016 **Speaker.** "500 years sediment record from the Segara Anakan lagoon, Java, Indonesia: Mangrove dynamics and human impact". ECSA56 Conference, Bremen, GER
2016 **Speaker.** "Deglacial and Holocene environmental and peat-carbon accumulation dynamics of a peatland in the coastal area of Central Sumatra, Indonesia". GTOE Conference, Göttingen, GER

Grants (selection)

2024 **PI.** Niedersächsischen Ministeriums für Wissenschat und Kultur, Germany, €39,910
2018 **Named postdoctoral researcher - research project developer.** DFG, Germany, €351,540
2014 **Doctoral fellowship.** DAAD, Germany, €53,000
2014 **Doctoral fellowship.** LPDP, Indonesia, €60,000 (fellowship was offered, but declined)
2014 **Doctoral fellowship.** Erasmus-Mundus LOTUS Program, EU, €17,000

Memberships of scientific societies

2017 - 2024 **Member,** Estuarine and Coastal Science Association (ECSA)
2016 - 2024 **Member,** Society for Tropical Ecology (GTOE)

Commissions of trust

2024 **Associate Editor for *Estuarine, Costal and Shelf Science*** (Elsevier)
2024 **Guest Editor for *Ocean & Coastal Management*** (Elsevier; ECSA60 Special Issue)
2023 **Reviewer for COP28 Policy Brief,** Global Mangrove Alliance
2022 **Reviewer for fellowship application,** NERC, UK
Reviewer: Nature Communications, Ecological Indicators, J. Biogeography, Anthropocene, Trees-Forests-and-People, Frontiers in Climate, Sustainability, Palaeogeography-Palaeoclimatology-Paleogeography, Rev. Palaeobotany & Palaeoecology.

Teaching contributions

2024 **Lecturer,** "Methods in Palaeoecology", Fac. of Biology and Psychology, Univ. of Göttingen
2022 **Guest lecturer,** "Tropical Paleoecology and Paleoclimatology", Fac. of Environment, Science and Economy, U. Exeter, UK
2021 **Guest lecturer.** "Palaeoecology in Conservation and Restoration", Bandung, IDN
2021 **Lecturer,** "Vegetation History in non-European Countries", Fac. of Biology and Psychology, University of Göttingen, GER
2019 **Lecturer,** "Pollen analytical exercises", Fac. of Biology and Psychology, Univ. of Göttingen
2016 **Lecturer,** "Methods in Palaeoecology", Fac. of Biology and Psychology, Univ. of Göttingen
2012 **Teaching assist.,** "Palynology", Fac. of Geology, Bandung Inst. of Technology, IDN

Outreach, popularization, and news pieces (selection)

2022 **Speaker,** Stakeholder engagement on mangrove ecosystem importance and values, Barranquilla, COL
2022 **Visiting lecturer,** Youth education on mangroves importance, Colegio San Jose, Barranquilla, COL
2022 **News piece,** "Climate change increase extreme weather patterns in Indonesia", Jakarta, IDN
2022 **News piece,** "Sea level rise cause higher potential of fire events: Study", Jakarta, IDN
2022 **News piece,** "Die Entwicklung der tropischen Torfgebiete in Indonesien seit der letzten Eiszeit", DE
2022 **News piece,** "Natural ecosystems protect against climate change", New York, US
2019 **News piece,** "Wie Lagunen Kohlenstoff speichern", Düsseldorf, DE